

E72-10188
CR - 128386



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Department of Geography

10 November 1972

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TO: ERTS Project Scientist, Code 650)
Attention: Dr. William Nordberg)

ERTS Scientific Monitor, Code 644)
Attention: Dr. Louis S. Walter)

ERTS Technical Officer, Code 480)
Attention: Mr. Edmund F. Szajna)

ERTS Contracting Office, Code 245)
Attention: Mr. John C. Blum)

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Greenbelt, Maryland 20881

NASA Scientific and Technical Information Facility
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SUBJECT: Type I Progress Report No. 3 on Contract No. NAS 5-21749 (Land Use
in Northern Megalopolis) (GFSC ID No. UN235; Proposal No. 101)

1. Problems.

- a. Receipt of Imagery. In one way the receipt of imagery has improved during this 60-day reporting period. Whereas we received the first images from Cycle I (25-31 July) six or seven weeks afterwards, we received the first images from Cycle V (5-11 October) less than four weeks later. However, this gain is more apparent than real. The earlier product was in the form of our basic map compilation medium, CIR composite transparencies, plus various supporting products. The latter receipts consist only of four b/w paper prints, of little or no use for actual mapping. Useful products must await the lengthy re-order process.

THUS WE STILL HAVE VERY LITTLE MORE ACTUAL MAPPING
IMAGERY NOW THAN WE HAD AT THE TIME OF THE ERTS SEMINAR
ON 29 September.

- b. Although autumn is the least cloudy season in New England, it appears that the two September cycles III and IV produced no useful imagery. However it appears that the final autumn cycle (Cycle VI; 23-29 October) encountered comparatively fair weather over most of New England, and we await that imagery with interest.

N73-10367

(E72-10188) LAND USE IN NORTHERN
MEGALOPOLIS Progress Report R.B. Simpson
(Dartmouth Coll.) 10 Nov. 1972 3 p CSCI

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When we have received all images through Cycle V, which ended on 11 October, we will have cloud-free cover for 30% of our test site, and for almost one-half of the core area (States of Massachusetts, Connecticut and Rhode Island).

2. Accomplishments.

A preliminary ERTS land use map of the State of Rhode Island (scale 1:250,000) was completed in time for the Seminar at GSFC on 29 September. Making this map involved preliminary decisions as to an optimum set of land use categories, optimum scale, a workable mapping method, and an overall determination of whether the research program proposed and contracted for was feasible in the light of early returns (affirmative, assuming timely receipt of cloud-free imagery).

Since that time further experimentation has confirmed a basic project requirement for (1) 9 x 9 CIR composite transparencies of all useful scenes, to be enlarged to 1:250,000 as a base for mapping, (2) 9 x 9 Band 5 b/w transparencies as an essential mapping supplement, and (3) 9 x 9 photos of Bands 4, 6 and 7 for reference purposes. These images should be, and the CIR composite almost must be, scene-corrected.

During the next 60 days it appears that we will be able to (1) map all areas for which appropriate products now are available (2) revise the software for converting the megalopolitan land use map to a digital data bank, and (3) explore methods for predicting areas of future population growth and decline.

3. List of articles, reports and talks.

- a. Simpson, Robert B., "Urban-Field Land Use of Southern New England: A First Report". Paper read before the NASA Seminar on Preliminary Findings from Analyses of ERTS Observations, September 29, 1972, GSFC. A short version of this paper, with illustrations, was delivered to ERTS Project Scientist (Dr. Nordberg) on 28 September.
- b. Simpson, Robert B., Yuill, Robert S., and Lindgren, David T., "Urban Land Use from RB-57 Photography: Computer Maps of the Boston Area". Paper read at the Eighth International Symposium of Remote Sensing, Ann Arbor, Michigan, October 1972.

- c. Lindgren, David T., Yuill, Robert S., and Simpson, Robert B., "The Creation of a Land Use Map and Data Base from High Altitude Aerial Photography: The New Haven Area". Paper submitted for 68th Annual Meeting of the Association of American Geographers, Atlanta Georgia, April 1973.

4. Changes in Standing Order Forms.

NONE initiated by the Principal Investigator during the reporting period. However, the following failures of the Sig-5 data bank at Goddard to reflect my contract-approved Standing Order Form, and the later suspension of the Form, are made a matter of historical record:

- (1) 24 August 1972. A personal visit to Goddard revealed that this contract and this investigator had been omitted from the Sig-5 data bank. The on-the-spot effort to correct this omission later proved to have been unsuccessful.
- (2) 13 September 1972. A second trip was made to Goddard in an effort to get this contract and this investigator into the data bank. Still no success. A follow-up letter dated 20 September resulted in partially activating my Standing Order Form, but only to 16 August 1972, a date already long passed.
- (3) 28 September 1972. A third trip to Goddard. My two previous trips, innumerable telephone calls, and a letter had succeeded in getting only the centroid of my area into Sig-5!!
- (4) 20 October 1972. A fourth trip to Goddard, this time by Dr. Lindgren, my Associate Investigator, confirmed that the entire test area was now in the bank, until April 1974, but for four b/w paper prints only. This is still the situation today. My basic Standing Order Form, for products which can be used in mapping, remains suspended.

5. List of Data Request Forms Submitted.

A current Data Request Form, with relative priorities indicated, will be brought to Goddard shortly.


Robert B. Simpson
Principal Investigator